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**Secure Courier: Competition for SHTTP**

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**Abstract:**

Netscape Communications Corp. has introduced Secure Courier, a cross-platform, open security protocol application that runs on top of the company's pipeline security protocol, Secure Sockets Layer (SSL). By using Secure Courier in conjunction with SSL, messages are encrypted and sent over a secured channel where they can only be decrypted by those authorized in the message.

**Text:**

IN A MOVE TO MORE DIRECTLY compete with the Secure Hypertext Transaction Protocol (SHTTP), Netscape Communications Corp. has introduced Secure Courier, a cross-platform, open security protocol application that runs on top of the company's pipeline security protocol, Secure Sockets Layer (SSL). By using Secure Courier in conjunction with SSL, messages are encrypted and sent over a secured channel where they can o be decrypted by those authorized in the message.

Secure Courier, encrypted with RSA Data Security Corp.'s RC-4 algorithms, acts as a "secure digital envelope" for financial data on the Internet. It wraps financial transactions in hyper-secure formats and routes them between the client and server through credit card gateways, says Charles Jadallah, director of financial services for Mountain View, CA-based Netscape.

The new application splits the financial part of a transaction by creating two encrypted digital envelopes: one for the purchase order, and the other for the sales slip. The sales slip envelope contains consumer financial information.

The encrypted envelopes are routed from the client to the merchant server.

At this point, says Jadallah, the merchant's bank can "flip a switch," which would allow the merchant to unwrap the slip envelope. From the merchant, the envelopes are routed to the consumer's issuing bank via credit card gateways where the secured messages are converted from Internet protocol to banking's ISO 8583 protocol. "And each protocol on [the bank] end is tweaked a little bit depending on the processor of the banks because there are always different implementations of 8583," says Jadallah. If the transaction is approved, the envelopes go back to the merchant and then to the client.

Secure Courier has attracted several industry players. Intuit Chairman Scott Cook is backing the new Netscape protocol. He is applying both Secure Courier and SSL to safeguard Intuit's new financial services server.

**THIS IS THE FULL-TEXT.**

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Netscape Communications Corp

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**EDI meets the Internet**

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**Abstract:**

During the last 20 years, electronic data interchange (EDI) has become a robust, structured and secure commerce vehicle for its adherents, which are mostly the largest buyers. The Internet clearly has a huge potential as a vehicle for electronic commerce, yet the Internet is everything that EDI is not. For example, the Internet is everywhere; EDI is a closed community of value-added networks (VAN) and predefined trading partner relationships. Several approaches are being developed to utilize the Internet to provide the type of exchange of commercial information that was once the sole province of EDI.

**Text:**

In late 1993, Tim Berners Lee, the grandfather of the World Wide Web (WWW) on the Internet, posed a rhetorical question - and his own response - via electronic mail to others trying to establish the new Internet format: "Do we really want to draw a line and say that a particular information item is commercial and use one paradigm, and [that] another is not really commercial so use another paradigm? Of course not. Such lines do not exist"

His topic was the question of whether the new graphical Internet form-sat could be used for the types of electronic commerce communications that electronic data interchange (EDI) networks had grown up to support. Internet pioneers, often seen as a collegial, congenial group, perceived a competitive threat from EDI networks. In decidedly less-than-altruistic fashion, Stephen Williams of Mead Data, the on-line database services giant, wrote: "EDI delivery will have an interesting (in my humble opinion) influence on the Internet. The network that can readily carry the commerce of the nation will be the network that the government will want to see grow." To its pioneers, the Internet was a solution looking for a problem, and EDI was a problem that they wanted to address.

What is EDI's problem?

Computer to computer communications among trading partners were developed to reduce the huge volume of paper required to document their transactions. Before EDI, each party used its computer to generate the paper output to be sent to the other party. The latter then employed an army of people to enter the data into its own computer. Both sides traded purchase orders, purchase order confirmations, shipping notices, receipts, invoices and payment advices - all of which not only increased costs but led to delays and opportunities for error. Eliminating the paper trail could yield huge savings. But even when businesses attempted to deal directly through computer, they had trouble implementing the necessary communications. Incompatible hardware, communications protocols and data file layouts made it difficult to turn one firm's purchase order into another company's sales order.

Electronic data interchange (EDI) standards and industry associations were developed to bridge these gaps. Under today's EDI, computers communicate not directly with one another but rather with common value-added networks (VAN), which are designed to overcome systems differences. Each computer has only to deal with the accepted VAN standard. Differing communication protocols no longer cause incompatibilities, as the VANs support every type of data transmission protocol in use. Purchase order files no longer have to be altered into sales order formats, since widely available translation software handles the mapping of internal data to the EDI standards.

These standards also address such issues as company identification codes, data security and authentication, and message delivery notification. EDI makes the technological aspects of exchanging information between buyers and sellers manageable and largely asynchronous. Each party can do as it likes internally without worrying about what the other party does - so long as both sides respect the common EDI standards.

During the last 20 years, EDI has become a robust, structured and secure commerce vehicle for its adherents, which are mostly the largest buyers: automobile manufacturers, major chain retailers, insurance companies. Governments, primarily the United States military, also make up a large proportion of EDI users. These giants have the clout to demand that their suppliers deal with them electronically. For these large buyers, investing in electronic data interchange offers significant paybacks. However, the benefits of the technology are harder to quantify for smaller suppliers.

This is especially true for suppliers who cannot or do not want to take the final step to integrate EDI data into their internal computer systems. Instead, these suppliers often set up stand-alone systems that simply print out the information from the EDI transaction, and then still key-punch it into their own order processing systems. They often find that setting up an EDI connection is a costly and complex process, involving acquiring new computer hardware and software, telephone lines, and VAN accounts. Companies that supply several buyers in multiple industries need to deal with several different VANs, and different EDI transaction set standards, making it an even more complex and expensive undertaking. Small buyers also encounter problems in implementing traditional EDI. They

must initiate the electronic trading partnership and then cajole their suppliers into acquiescing. Thus, few small businesses have been able to take full advantage of EDI, simply because of the complexity built into the system by the larger players. According to a 1995 study by the US. Department of Labor and Internal Revenue Service, EDI is used by only about 40,000 of the roughly 20 million businesses in that country (a similar proportion likely exists in Canada). EDI has become a barrier to entry rather than a business enabler, and has tilted rather than levelled the playing field. Furthermore, the EDI standards make absolutely no provision for conducting business directly with the consumer. Clearly, realizing the benefits of electronic commerce on a wider scale will require a new paradigm.

### Enter the Internet

Once simply a means for communication among government agencies and academics, the Internet has become ubiquitous in the 1990s. In Canada and the U.S., this electronic communication network is available virtually wherever there is a telephone. Internet access software, once available only for Unix computers, now exists for everything from IBM AS/400s to Apple Macintosh PCs. Every new IBM PC, whether sold with Windows 95 or OS/2, offers built-in access to the Internet, requiring nothing more than a modem and a phone line (and a credit card!). Even modems are now built-in. Graphical user interfaces or browsers that are as easy to use as word processors allow easier Internet use than yesterday's cryptic Unix command roots. Between them, Microsoft and Netscape alone have literally given away millions of World Wide Web browsers. Internet communication speeds have improved dramatically. Current modems transmit information at the rate of 15,600 characters and more per second, compared to what was considered a fast network connection of 120 characters per second (1,200 baud) only a decade ago. Cable modems, which are already a fact of life in New York, are coming to North York (and other points throughout Canada) as quickly as the cable television companies can upgrade their equipment. Allowing transmission speeds of 1 million characters per second, these modems make Internet communications with customers or suppliers halfway around the world as convenient as LAN connections to the office server down the hall.

The Internet clearly has a huge potential as a vehicle for electronic commerce. Yet the Internet is everything that EDI is not. The Internet is everywhere: EDI is a closed community of VANs and predefined trading partner relationships. The Internet is open, accessible and unsecured. EDI networks are accessible only to registered users (surfers and hackers specifically excluded). Internet browsers, with their Hypertext Mark-up Language (HTML), are easy to adapt to many types of information exchange: the EDI x.12 and EDIFACT standards are highly structured and rigid. Setting up Internet access can be a do-it-yourself project: EDI implementation is generally considered to be a major systems development project, not to be undertaken without an army of consultants.

Proponents of each of these forms of inter-business communications can offer compelling reasons about why the other side cannot possibly assume their role. But the arguments sound much like the arguments of the early '80s about whether or not PCs were simply a passing fad. The Internet appears just unlikely to fade away. For its part, structured EDI has a long

history of facilitating the flow of business information, and the significant investments that have been made in EDI systems will not easily be abandoned. Both forms will evolve and, in all likelihood, converge.

#### Buying and selling, Internet-style

Several approaches are being developed to utilize the Internet to provide the type of exchange of commercial information that was once the sole province of EDI. The simplest role of the Internet is to provide inexpensive access to established value-added networks. Internet access eliminates long-distance costs in many parts of the country and eliminates the need for special data communications lines. IBM's Advantis communications division, which is both an EDI VAN and an Internet service provider, is one company that provides this capability. In Canada, the federal government's Open Bidding Service, while admittedly not strictly a user of EDI, can now be reached from the Internet in addition to its proprietary network. A more significant role for the Internet involves using Internet e-mail to bypass the VANs completely. Regular EDI x.12 structured transactions are treated as a special type of e-mail attachment by the Multipurpose Internet Message Extensions (MIME) standard. At the receiving end, the messages can simply be printed out, without further need for translation, or EDI translation software can upload them into sales order systems to avoid manual data entry. Major EDI translation software vendors such as Sterling Software, DNS Worldwide and Premenos already provide this type of function, and other EDI software developers are expected to follow suit.

Diverging even further from EDI transaction standards are remote order entry systems that use the Internet to send and receive data in the specific formats required by various order processing systems. Says Tracy Broadbent, CMA, president of Bravo Software Group, which has developed such a system for use with the Accpac order processing system, "Our software uses the Internet to directly send orders from buyers to sellers without the need for VANs and VAN interconnects, and without the need for EDI translation software."

Lastly, the Internet can be used to interconnect companies without any of the standard structure of EDI. The least structured approach is to incorporate the text of a purchase order in the body of a simple e-mail message. Each company uses its own PO format, and the receiving company simply prints out the e-mail message and uses it as if it were a traditional paper document. A more structured approach - at least from the seller's point of view - is to use a "fill-in-the-blanks" form on the World Wide Web. This enables the buyer to enter data in a format that can be directly imported into the seller's sales order processing system. On-line catalogues extend this approach, giving the buyer more information about the product before ordering. Major database software suppliers, such as Oracle and IBM, provide links between data stored in their relational databases and WWW servers. These servers can provide prospective customers with extensive product information on demand, even including audio and video clips. As the data are entered by the customer in the format required by the seller's system, there is no need to translate EDI-standard data formats. One example is the on-line member services order form maintained by The Society of Management Accountants of Canada at [www.cma-canada.org](http://www.cma-canada.org). A hybrid system available from Dynamic Web Transaction Systems

(sales@dynamicweb.com) uses the World Wide Web to capture purchase order transactions from small, non-EDI customers. It then converts them into standard EDI x.12 purchase order transactions that can be merged with pure EDI messages from larger trading partners.

Industry watchers appear divided about the ability of the Internet to become a medium of business transactions. Acknowledging that business is concerned about transaction security, Nigel Wood, vice-president of technology with the EDI Council of Canada, says, "Internet-based organizations such as CommerceNet have the potential to displace established VANs." As with most aspects of business, competition leads to improvements that might not otherwise be made. Internet-based commerce will certainly give traditional EDI a good run for its money.

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**THIS IS THE FULL-TEXT.**

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